Draft Environmental Assessment

Mount Haggin Wildlife Management Area
Habitat Restoration Project

January 2009

1.0: PURPOSE OF AND NEED FOR ACTION

1.1 Proposed Action

Montana Department of Fish, Wildlife, and Parks (FWP) propose to improve a portion of the wildlife habitat within the Mt. Haggin Wildlife Management Area. Habitat to be affected is approximately 900 acres of aspen and bitterbrush communities as well as a portion of conifer forests on the northeastern quadrant of the wildlife management area (WMA).

1.2 Need for the Action

The acquisition of the Mt. Haggin WMA by FWP in 1976 provided winter range for elk, mule deer, and moose in addition to providing public outdoor recreational opportunities. Over the years, Mount Haggin WMA has seen a decrease in the number of acres dominated by aspen and mixed shrub/grassland communities due to the encroachment of Douglas fir and lodgepole pine into those areas. Due to past large-scale logging activities, conifer forests have become dense stands of even-aged trees that make them highly susceptible to disease and insect infestations and limit the amount of available forage and structural complexity needed for healthy forest communities. Natural forces, such as wild fire that limited the establishment of conifer saplings on forest edges, assisted in the regeneration of aspens and created mosaics within forest stands that have not occurred within the WMA in some time.

Both aspen (*Populus tremuloides*) and bitterbrush (Antelope bitterbrush, *Purshia tridentata*) are important food sources for ungulates and provide cover for game and nongame species. Across Mount Haggin WMA, aspen stands are at the risk of being lost due to forest succession as conifers replace aspen as the dominant over-story species. Long-time aspen researcher Dale Bartos found there to be a 64% reduction in the number of acres where aspen can be found today compared to the species' historic range throughout Montana (Bartos 2001, Bartos and Campbell, Jr. 1998, Campbell and Mitchell, *final prep.*). The lack of natural disturbance, such as fire, is considered the primary reason for the species' waning population.

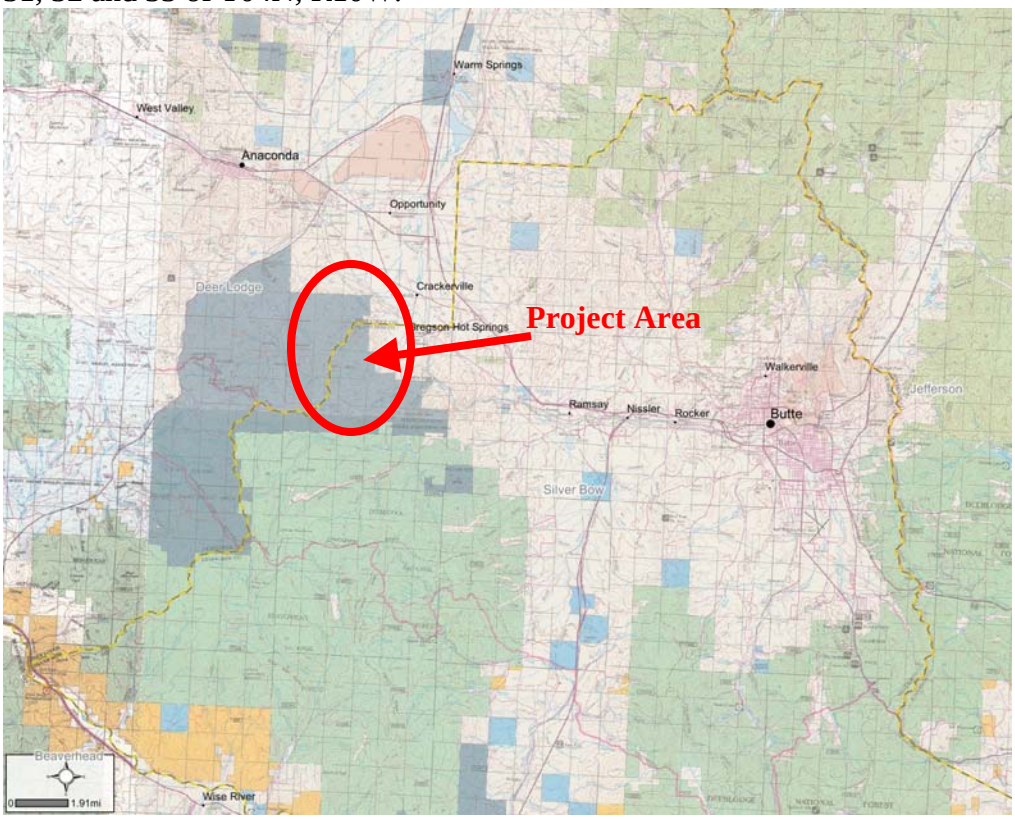
Conifer encroachment is also negatively impacting bitterbrush and its associated plant communities on the WMA. The bitterbrush plant itself is highly intolerant of shade. Where Douglas fir trees overtop individual shrubs and shade out direct sunlight, the plant's vigor and ability to regenerate are greatly reduced and the plant eventually dies. Unlike aspen, fire does not enhance the ability of bitterbrush to regenerate. Instead, bitterbrush relies on seed distribution and caching of its seeds by rodents to regenerate and an open overstory to thrive. The dominant grass in bitterbrush communities is rough fescue (*Festuca scabrella*), a densely tufted bunchgrass that is considered the highest-producing, native bunchgrass in the Mountain grasslands. Because it retains a considerable amount of nutritive value after maturity, it is a key

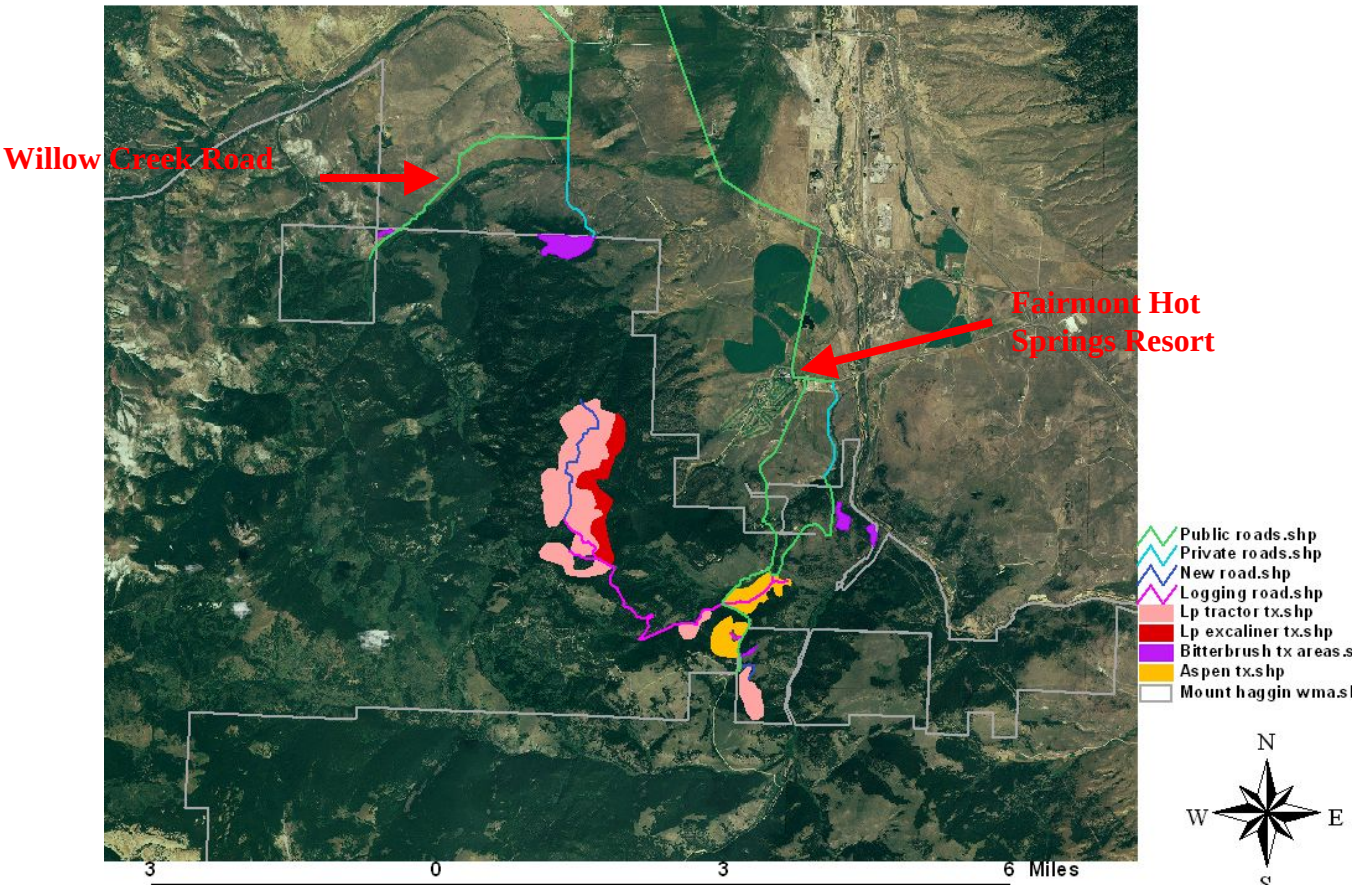
forage species on elk winter range. It also is being negatively affected by Douglas fir encroachment.

In addition to the encroachment pressures on aspen and bitterbrush communities, the winter range portion of Mount Haggin WMA contains large stands of dense, even-aged lodgepole pine, relics of past logging operations. Even-aged stands have less structural diversity, making them less attractive to wildlife and more prone to disease and insect infestations. In fact, an unprecedented outbreak of Mountain pine beetle has attacked and killed large tracts of lodgepole pine (*Pinus contorta*) in southwest Montana including within Mount Haggin WMA. A decade-long drought and lack of extreme winter temperatures capable of killing beetle larvae have contributed to the current local beetle epidemic on the WMA in addition to the existing forest structure. The result is large stands of dead and dying lodgepole pine that with time will contribute to heavy ground fuel build-up resulting in an increase in the risk of catastrophic fire. Furthermore, as millions of dead lodgepole pine begins to fall and create large piles of impassable debris, big game use and movement patterns on the winter range may be greatly reduced. While FWP recognizes that dead timber can serve an important ecological function by providing habitat to cavity-nesting birds and contributing nutrients to the soil, the negative impacts of large tracts of dead timber have the potential to outweigh the benefits.

<u>Location of Project Area</u>

Mount Haggin Wildlife Management Area is located approximately 15 miles west of Butte, MT, at the base of the Anaconda-Pintler Mountains in Deer Lodge and Silver Bow Counties. The proposed project will take place within the Silver Bow portion of the WMA at Sections 4, 9,10, 13, 14, 15, 16, 22 and 23 of T03N, R10W and within Deer Lodge County, portions of Sections 31, 32 and 33 of T04N, R10W.





Close-up of project area, showing location of specific vegetation treatment areas.
*****NOTE: Vegetation site-specific aerial maps are included in *Appendix A*.**

1.3 Objectives of the Proposed Action

1.3.1 Objective 1: Reduce the encroachment of Douglas fir within bitterbrush communities, in order to promote the health and regeneration of bitterbrush and associated plants important to wildlife, such as rough fescue.

1.3.2 Objective 2: Reduce the encroachment of Douglas fir and lodgepole pine within and surrounding aspen communities, in order to promote stand health and propagation of aspen.

1.3.3 Objective 3: Remove stands of beetle-killed lodgepole pine in order to enhance the overall complexity of stand structure across the winter range, mitigate pine beetle infestation and generally improve forest health, and reduce forest fuel loads.

1.4 Relevant Plans and Authority

1.4.1 Mount Haggin Wildlife Management Area Interim Management Plan (1980)

The interim management plan states Mount Haggin WMA will be managed for dispersed outdoor recreation activities that are consistent with the area's ability to support such use without degradation of its natural resource values (wildlife, fisheries, vegetation, and cultural/historical

resources). Special attention would be given to improving deteriorating areas and returning all lands to a more natural environment.

1.4.2 Montana Statewide Elk Management Plan (2004)

One of the habitat goals specified in FWP's 2004 Elk Management Plan is to improve elk habitat through projects designed to improve vegetative diversity and maintain or increase carrying capacity on winter range. The proposed project would work toward meeting this goal through the reduction of conifer establishment within bitterbrush and aspen habitats, and by increasing structural diversity and promoting forest health by removing stands of beetle-killed lodgepole pine within conifer forests on Mount Haggin WMA.

1.4.3 Montana Department of Fish, Wildlife and Parks Comprehensive Fish and Wildlife Conservation Strategy (2005)

FWP's Comprehensive Fish & Wildlife Management Strategy (CFWCS, FWP 2005) identified seven different community types of greatest conservation need including mixed shrub/grassland associations. The proposed habitat restoration project will target areas included in the shrub/ grassland community type that are threatened by conifer encroachment. Over 30 wildlife species either depend entirely on this type of habitat for their survival or they rely on the resources found there to supplement their use of other environments.

In addition to the importance of the shrub/grassland community type affected by the proposed project, numerous wildlife species of concern are found on Mount Haggin WMA. The following is a list of sensitive species that are known or assumed to exist within the WMA. For each species, it is denoted which tier the species is ranked (1-5, with 1 being most in need of conservation) and whether it is a Species of Concern in Montana (SOC) or a federally listed Threatened or Endangered Species (T/E).

Common Name	**Scientific Name**	**Tier Rank/SOC**
Northern Goshawk	*Accipiter gentiles*	2, SOC
Black-backed Woodpecker	*Picoides articus*	1, SOC
Olive-sided Flycatcher	*Contopus cooperi*	1, SOC
Great Gray Owl	*Strix nebulosa*	2, SOC
Flammulated Owl	*Otus flammeolus*	1, SOC
Clark's Nutcracker	*Nucifraga Columbiana*	3, SOC
Fringed Myotis	*Myotis thysanodes*	2, SOC
Hoary Bat	*Lasiurus cinereus*	2, SOC
Gray Wolf	*Canis lupus*	1, T/E
Wolverine	*Gulo gulo*	2, SOC
Canada Lynx	*Lynx Canadensis*	1, T/E
Fisher	*Martes pennanti*	2, SOC
Westslope Cutthroat Trout	*Oncorhynchus clarkii lewisi*	1, SOC
Bull Trout	*Salvelinus confluentus*	1, T/E
Agapetus Caddisfly	*Agapetus Montanus*	3, SOC

1.5 Overlapping Jurisdiction

1.5.1 Name of Agency and Responsibility

a. Montana Department of Environmental Quality – Air Quality Permits
b. Montana Department of Fish, Wildlife & Parks - Montana Stream Protection Act (124 permit)
c. Montana Department of Natural Resources & Conservation – Wildfire Suppression
d. Montana State Historic Preservation Office – Cultural and Historic Resources
e. Deerlodge and Silver Bow Counties – Weed Management

All necessary permits will be obtained prior to the implementation of the project.

1.6 Decision That Must Be Made

The decision to be made is whether Montana Fish, Wildlife & Parks should approve the habitat restoration project for a portion of Mount Haggin Wildlife Management Area which would entail the removal of conifers from selected areas. This EA discloses the analysis and environmental consequences associated with implementing the proposed action or its alternative. This EA will provide information and analysis to determine whether an action results in a significant effect and would, therefore, require the completion of an environmental impact statement (EIS). The responsible official for this proposal is the Region 3 Supervisor, Pat Flowers. If an EIS is not required, a Decision Notice will document the decision and the rationale for it.

2.0: ALTERNATIVES

2.1 Alternative A (Proposed Action): To Improve Wildlife Habitat On the Winter Range of Mount Haggin Wildlife Management Area by Removing Conifers Affecting Aspen and Bitterbrush Communities and by Removing Select Stands of Beetle-killed Lodgepole Pine Within Conifer Forests in Order to Increase Structural Diversity and Promote Forest Health.

Anticipated Habitat Treatment Prescriptions:
****NOTE - FWP contracted with a licensed forester during 2008 to determine the feasibility of doing this project. Much of the prescriptions detailed here are a product of that contract. ****

Please refer to Aerial Maps in Appendix A for specific locations of treatment areas.

Aspen: There are two aspen stands identified for treatment, Clayton and Hi Rye; both are adjacent to the Beal Mine Haul Road. Approximately 150 total acres will be treated (Clayton - 81 acres, Hi Rye - 65 acres).

All conifers (Douglas fir and lodgepole pine), pole-size and larger, will be mechanically removed from within selected aspen stands and from a buffer of approximately 30 meters surrounding those stands. This will open up the forest canopy to provide more direct sunlight to aspen and also remove the seed source for further conifer establishment in proximity to those stands. In addition, the mechanical disturbance to aspen roots resulting from logging activities is likely to be sufficient to increase bud growth and promote aspen suckering.

Slash resulting from the removal of conifers will be piled and burned when preferred weather and moisture conditions occur.

Bitterbrush: There are five bitterbrush treatment areas totaling approximately 100 acres: Willow Creek – 4 acres, Willow Glen – 64 acres, German Gulch – 15 acres, Durant – 8 acres, and Hi Rye – 3 acres.

All Douglas fir with 6-inch Diameter at Breast Height (DBH) or smaller will be removed including seedlings which will be hand-pulled. This will remove most of the existing and potential canopy of Douglas fir that shades out and eventually eliminates bitterbrush. Once the overstory of Douglas fir is removed, access to direct sunlight by bitterbrush plants should be sufficient to maintain vigor and regeneration of this plant community.

Slash resulting from the removal of Douglas fir will be lopped and scattered.

Conifer Forest Health: There are four conifer forest health treatment areas totaling approximately 655 acres: Gregson North – 417 acres, Gregson South – 67 acres, Excaliner – 148 acres, and White Pine – 23 acres. Although the combined acreage of the Gregson North, South, and Excaliner treatment areas is relatively large and they are in close proximity to one another, the expected impact on overall elk security and cover across the entire winter range is likely to be minimized because these acres are located in the heart of an essentially roadless area. Some old logging roads exist. They are closed off to motorized traffic and are heavily interspersed with Douglas fir and occasional stands of aspen, alder and willow, all of which will remain.

All lodgepole pine, pole-size or larger, will be mechanically removed from select treatment areas while Douglas fir within the areas will be retained as much as possible. Small pockets (less than two acres) of beetle-killed lodgepole pine in proximity to the access roads may be opportunistically harvested as well. Removal of lodgepole pine, most of it dead or dying from beetle infestation, will promote forest health by reducing the source of the infestation and by creating gaps in stands that will slow the spread of remaining beetles. Additionally, removing lodgepole pine while retaining other tree species will enhance the overall complexity of forest stand structure across the winter range by creating a mosaic of stand ages and composition. It will also increase forage production for wintering big game by removing some of the shading from the forest canopy.

Slash generated will be broadcast burned when preferred weather and moisture conditions occur. This is in accordance with findings from the Montana Cooperative Elk Logging Study (Lyon et al. 1985).

<u>Timber Removal Logistics</u>

Licensed Forester:
A licensed forester will be retained on contract by FWP to supervise the proposed habitat restoration work in conjunction with the Butte Area wildlife biologist. The forester will be selected through the State's competitive bid process. The Butte Area wildlife biologist will

consult with this forester to develop final plans and specifications for the proposed project in accordance with the criteria listed below.

Minimize Impacts to Elk:
Findings from the Montana Cooperative Elk-Logging Study (Lyon et al. 1985) will guide the logging portion of this project. Specifically, the following will apply:

- To minimize the loss of habitat security:
    - Logging roads will be restricted to logging traffic only and will be closed to motorized traffic once the project is completed.
    - Logging activity will be concentrated both temporally and spatially.
    - Thinning will be avoided along forest opening edges.
    - Sufficient cover will be left adjacent to and between units.

- To maintain the integrity of cover for elk:
    - Douglas fir and other deciduous tree species will be retained in the forest health treatment areas. Only lodgepole pine, pole-size or larger, will be removed.
    - Forest cover adjacent to benches and finger ridges will be left for thermal cover and bedding sites.
    - Cutting units will be placed to enhance cover types important for elk and other big game such as aspen stands and willow communities.

Findings from the Long Tom elk-logging study (Lyon et al. 1985) have shown that:

- Displacement of elk is minimal if roads are open for logging traffic only.
- Displacement is least in July and greatest in the fall.
- Elk moved back into the area when logging was completed and the roads were closed.
- Elk avoid new clear cuts unless they are fringed with dense timber. Also, elk use of clear cuts increases as the vegetation height increases. This is because the new growth consists of trees and shrubs and other available forage and browse species.

Additional Silvicultural Prescriptions and Harvest Design:

- Logging treatments will be implemented through a commercial timber sale specifying mechanical harvesters.
- The mechanical methods to be utilized are tractor and Excaliner logging. Excaliner logging uses motorized cables to lift the felled tree to the preparation area while leaving very little scar marks on a hillside.
- In tractor harvest areas, cut trees will be skidded (rubber-tired skidders) whole length to landings where they will be processed into merchantable logs.
- In Excaliner areas, trees may be bucked to log length in the woods and logs skidded to landings. Excaliner logs will be forwarded to the main access road.
- Stumps will be cut to 4-inch height or less.
- Logging contractors will be encouraged to utilize all possible forest products derived from the salvage: sawlogs, houselogs, post/poles and pulp, market conditions permitting.

Roads:
To address concerns for negative impacts on soil and water resources while implementing timber removal, the following criteria will be adhered to:

- As much as possible, new roads will be constructed on moderate to low slopes, giving a low impact road prism, and will be constructed to the lowest standards.
- New roads will be constructed in strict accordance with Water Quality Best Management Practices for Montana Forests (Logan 2001).
- Existing logging roads that are to be used for this project and that have been built prior to the 1991 Streamside Management Act will be brought into compliance.
- After the project is completed, new logging roads will be recontoured and seeded with native seed mixtures appropriate for the area. Existing logging roads that have been used for this project will also be reseeded. All crossing features (culverts, etc.) that were placed for this project will be removed.

Specific corrective actions needed to establish operational logging roads will be the responsibility of the logging contractor under the supervision of a licensed forester working with FWP.

Access to Treatment Areas:

- *Aspen:* Access to the aspen treatment areas will be from the Beal Mine Haul Road and old logging roads that exist within close proximity to those stands. The old logging roads will be bladed open to accommodate logging trucks and equipment.

- *Bitterbrush:* Access to the bitterbrush treatment areas will be from the Willow Creek Road and Beal Mine Haul Road, depending on the site location. In addition, FWP has gained permission to cross a portion of the privately-owned Willow Glen Ranch in order to access the Willow Glen treatment areas. ATVs will be utilized to traverse areas not adjacent to the established roads.

- *Conifer Forest Health*: Access to the conifer forest health treatment areas will be from the Beal Mine Haul Road, approximately 3.5 miles of old logging roads, and approximately 1.5 miles of new road that will need to be constructed for this project. Old logging roads will be bladed open to accommodate logging trucks and equipment. New roads will be built to minimum standards and will be recontoured and seeded after completion of the project.

For ease and efficiency in hauling logs from Mount Haggin WMA, FWP has gained permission from the owner of the Beal Mine Haul Road where it crosses private land to use this road during the project period. The use of this road will eliminate potential disturbances to private residences along German Gulch Road and will provide a safer transportation route of logging equipment in and out of the WMA since the mine road is wider and well maintained to accommodate the heavy mine equipment.

Timing of Project:

All proposed treatment areas are located on the winter range of Mount Haggin WMA. Because this portion of the WMA is closed in winter to provide security for big game, the proposed project will occur during the late spring and summer seasons when road and weather conditions allow access to the treatment areas.

Weed Management:

All guidelines and recommendations for managing noxious weeds in FWP's Integrated Noxious Weed Management Plan will be followed. These include:

- Power washing of any vehicle or equipment that will be driven off-road prior to arrival on the property.
- Reseeding areas disturbed as a result of this project with a native grass/forb mix.
- Mechanically, biologically, and/or chemically treating the treatment areas for weed control for up to five years after completion of this project.

Costs:

Expenses for this project (i.e. removal of conifers, installation of temporary culverts, weed management, etc.) will be fully covered by the revenue generated from the sale of harvested timber. The FWP contract with a licensed forester will be paid from the FWP Habitat Bureau operations budget. Any remaining funds after the completion of the project will be deposited into FWP's Real Property Trust account to support other FWP programs.

Initial estimates for costs and revenues for this project are $100,000 and $300,000, respectively.

2.2 Alternative B (No Action): Implement No Habitat Restoration Activities and Status Quo is Maintained at the WMA

Under this alternative, FWP would not embark upon any habitat restoration activities that could improve some of the aspen and bitterbrush communities with the WMA or that would benefit the overall health of the forest communities on the winter range. Aspen and bitterbrush, both highly shade intolerant, will continue to be encroached upon by Douglas fir and lodgepole pine. Conifer expansion into aspen and bitterbrush communities will negatively impact the vigor and ability for regeneration of these community types due to competition for water and sunlight. This in turn will negatively impact the big game populations that winter in this area and depend on aspen and bitterbrush and the associated native plant communities for food and cover.

The dense, even-aged stands of lodgepole pine will continue to be affected by the mountain pine beetle infestation. Within a few years, all lodgepole pine pole-size and larger will be dead, creating a significant build-up of fuels and putting the entire landscape at greater risk of catastrophic wildfire. As millions of dead lodgepole pine trees begin to fall and create large piles of impassable debris, big game use and movement patterns on the winter range may be greatly impacted. Forests on the winter range will continue to lack the structural diversity that enhances conifer communities for big game, small mammals, and a variety of bird species.

FWP will continue to manage the WMA for the benefit of wildlife species and for year-round recreation activities such as hiking, hunting, cross-country skiing, and fishing. FWP will carry on with noxious weed management activities within the WMA.

2.3 Alternative Eliminated from Further Consideration: To Improve Wildlife Habitat by Removing Conifers Affecting Aspen and Bitterbrush Communities in Limited Areas Within Mount Haggin Wildlife Management Area

FWP has considered doing parts of the project, i.e. just bitterbrush, just aspen, or just forest health improvements, etc. If just the bitterbrush portion was implemented, there will be no revenue generated through the extraction and sale of timber to pay for the work, and FWP would have to compete with other Wildlife Division projects to obtain the necessary funding to complete the proposed project. If FWP just implemented the aspen and/or forest health portion, those projects would likely pay for themselves (and then some). But the idea is to emphasize the collective benefit to wildlife by doing habitat restoration across a *landscape***,** which in this case is the winter range, rather than at the scale of a single patch or stand. Therefore, this option was eliminated.

3.0: AFFECTED ENVIRONMENT

3.1 Description of Relevant Pre-Existing Factors

The proposed project area has been impacted by past logging- and mining practices of the historic Anaconda Copper Mine in nearby Anaconda, MT. Much of the Mount Haggin Wildlife Management Area had been heavily logged during the mine's operation from the 1880s to the 1940s in order to provide lumber for shaft supports, building materials, and fuel for the smelters. The most recent logging on Mount Haggin WMA occurred in the 1980s in accordance with a timber contract that came with the purchase of the WMA by FWP.

Vegetation as far as eight miles away from the smelter in Anaconda has been negatively impacted by smelter emissions. The air pollution contained high levels of arsenic, sulfur, and zinc that contaminated the soil and greatly reduced the rejuvenation capacity of all types of vegetation (grasses, shrubs, and trees). The presence of bare slopes devoid of topsoil and vegetation can easily be seen on parts of Mount Haggin WMA today.

3.2 Description of Relevant Affected Resources

3.2.1 Soil & Geologic

The area is located east of the Anaconda-Pintler range along the western edge of the Boulder batholith. Topographically, this area is a series of mountain slopes and narrow drainages. Parent materials in the area are mostly volcanic rocks, granodiorite and quartzite (Iagmin 1972). Elevation ranges from 1580 to 1940 m. The soils in the area are from granitic residium and colluvium. Soils are mostly Mollisols with some Alfisols at the higher elevations and some Inceptisols on the steeper slopes. A portion of the soils in the area has been classified as loamy skeletal, mixed typic Argiborolls.

The aspen treatment areas (Clayton and Hi Rye) are in locations where the slope is of slight to moderate grade (0-30%) and are dominated by soils that are classified as gravelly ashy loam (USDA, Soil Survey).

The bitterbrush treatment areas are located in differing types of soil within the WMA with slope grades ranging from 0-40%. At Willow Creek, the predominant soil is cobbly, sandy clay loam. At Willow Glen, the soil is mainly sandy loam. At the Durant, German Gulch, and Hi Rye locations, the soils are primarily gravelly ashy loam (USDA, Soil Survey).

The conifer forest health treatment areas encompass soils classified as coarse sandy loam, sandy clay loam, and gravelly ashy loam (USDA, Soil Survey). These areas cover a more rocky terrain than the other habitat restoration sites. Slope grades range from 8-50% with the steeper grades slated for Excaliner removal of trees.

3.2.2 Air & Noise

All of the bitterbrush and aspen treatment areas are adjacent to or in close proximity to established roads, either the Willow Creek Road or Beal Mine Haul Road. These areas are routinely subjected to noise and dust generated by passing vehicles.

The conifer forest health treatment areas are accessible by old logging roads which have been blocked off at the junction with the Beal Mine Haul Road since their last use in the 1980s. Hikers and hunters periodically use these roads to access the backcountry. Since this area is only accessible by non-motorized vehicles, ambient air quality is good and limited man-made sounds can be heard over the normal sounds of the forest.

3.2.3 Water & Fisheries

Numerous creeks traverse the northeastern portion of Mount Haggin WMA. Two creeks occur within the proposed restoration area, Gregson and Whitepine Creeks. Gregson Creek transects the Gregson North and Excaliner forest health treatment areas while Whitepine Creek is adjacent to the Clayton aspen treatment area. The Whitepine forest health treatment area is located upslope from Whitepine Creek several hundred yards.

FWP fisheries biologists have not sampled either creek, but both creeks are considered fishless due to their size and inconsistent water flows. Both creeks likely support aquatic invertebrates such as mayflies and caddis flies, and their riparian areas likely provide habitat for amphibians such as frogs and toads.

3.2.4 Vegetation

The region of the WMA that would be affected by the proposed project encompasses portions of conifer forests, dry grass/shrubland communities, and aspen stands. Because of the focus of this project, only select vegetation will be discussed here.

Bitterbrush

Bitterbrush, also known as antelope bitterbrush, is a deciduous shrub in the rose family (*Rosaceae*) with small, tri-lobed leaves. Although it can reproduce by sprouting vegetatively (Hormay 1943), it mainly reproduces by seed dispersal and from dormant rodent caches.

In addition to its intrinsic value as a shrubland community plant, bitterbrush is important for many wildlife species, especially mule deer and elk. Moose, bighorn sheep, blue grouse, and

jackrabbits also use bitterbrush for food and cover (Matlock-Cooley 1993). Its seeds are an important item in the diet of many rodents and birds (Hormay 1943).

Several studies have been conducted on bitterbrush communities on the Mount Haggin WMA (Frisina et al. 2006, Guenther 1989, Guenther et al.1993, Matlock-Cooley 1993, Wambolt et al. 1996) and have added greatly to our knowledge of this plant. Guenther et al. (1993) investigated the relationships of habitat characteristics to the success of bitterbrush stands and found that bitterbrush canopy cover was greatest on south- and east-facing slopes and that bitterbrush cover decreased when cover from other plants increased. In addition, the researchers found that dead bitterbrush cover was positively correlated with deer pellet density indicating that heavy browsing by deer might be affecting the bitterbrush. In fact, utilization of bitterbrush twigs across the study area averaged 80% which is considered very heavy browsing when related to Hormay's (1943) conclusion that not more than 60% of current year's twig growth should be browsed in any year if the plant is to retain its vigor and produce seed.

Aspen

Aspen is a preferred browse species for elk and moose as well as providing thermal and hiding cover to these big game species. Aspen stands also provide ideal nesting and foraging habitat to many bird species including ruffed grouse, dusky flycatchers, black-capped chickadees, Swainson thrushes, northern flickers, and downy woodpeckers.

Aspen occurs in primarily three different types (Bartos and Campbell 1998a): (1) stable, (2) successional to conifers, and (3) decadent. Stable aspen is considered to be "properly functioning" and replacing itself so that stems of various ages are visible when viewing an aspen clone. The succession of an aspen community to conifer forest often occurs when the natural forces, such as fire or disease, have affected the aspen's ability to regenerate giving shade-tolerant trees an advantage (Bartos 2001). The final type of aspen community is one in which decadent clones are generally of a single age and are very open; mature trees are not being replaced as they die because successful regeneration is lacking. Across much of Mount Haggin WMA, the influences of past logging and mining practices and the lack of natural disturbances such as wildfire have allowed conifers to become established within aspen groves. The two aspen treatment areas in this proposed project fall within the second aspen type as described above.

Occurrences of aspen regeneration from seed have been noted (Kay 1993), but aspen primarily reproduces vegetatively in the intermountain west (Schier et al. 1985). Vegetative reproduction of aspen can be initiated through manipulations that provide hormonal stimulation, proper growth environment, and sucker protection (Shepperd 2001). In a study that compared various treatments on aspen regeneration success in the Deerlodge National Forest, Hodge (1997) found that mechanical scarification and fencing proved to be successful treatments while leaving high slash concentrations on treated sites did not reduce browse intensity on aspen suckers.

Lodgepole Pine

Much of the conifer forest on Mount Haggin WMA has been heavily affected by the logging practices of the late 19th and 20th centuries when timber was harvested to supply lumber to the Anaconda Copper Mining Company. Large amounts of timber were necessary not only to

convert to charcoal for fueling local smelters but also to produce mine "stulls" that could be used to support tunnels and shafts (Newell 1980). The ridges surrounding Mount Haggin, with their vast acreages of lodgepole pine, offered a convenient source of timber. In 1883, the Anaconda Company awarded a contract for 300,000 cords of wood. In 1906, a second contract was awarded for 100 million board feet of timber, all from the Mount Haggin area. In November 1906, the Big Hole Forest Reserve was established, in part to bring some measure of protection to the timber resources of the Mount Haggin area. Two years later, lands from this reserve were divided into the Beaverhead, Bitterroot and Deerlodge National Forests. Most of the timberlands in the Mount Haggin area were included in the Deerlodge National Forest.

Because of the immense amount of timber being harvested in the Mount Haggin area, the U.S. Forest Service developed many of their marking rules and timber selection guidelines in this area. The 1906 timber contract was the first large timber sale in U.S. Forest Service's Region 1 and because of such status earned a visit from Gifford Pinchot, chief of the U.S. Forest Service from 1905 to 1910.

Despite the various methods employed to select timber for harvest, the end result of each was that large tracts of lodgepole pine forests in the Mount Haggin area were clear-cut at least once, some areas more often, at some point throughout the past century. What we see today is the residual effect of those logging practices – large stands of densely packed, even-aged lodgepole pine that lack the variety of understory vegetation and structural diversity that provide forage and shelter to game and nongame species; reduce the potential for multi-aged conifer establishment due to intense competition for sunlight, soil and water resources; and enable large-scale infestations and disease outbreaks to occur due to the density of trees in the stand. The conifer forest health treatment areas in this project fit this description.

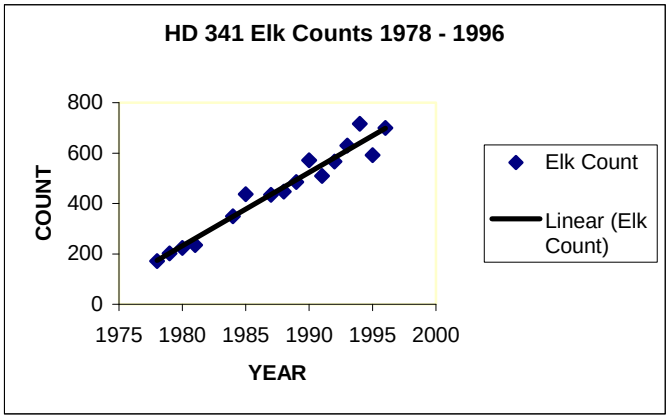
3.2.5 Wildlife

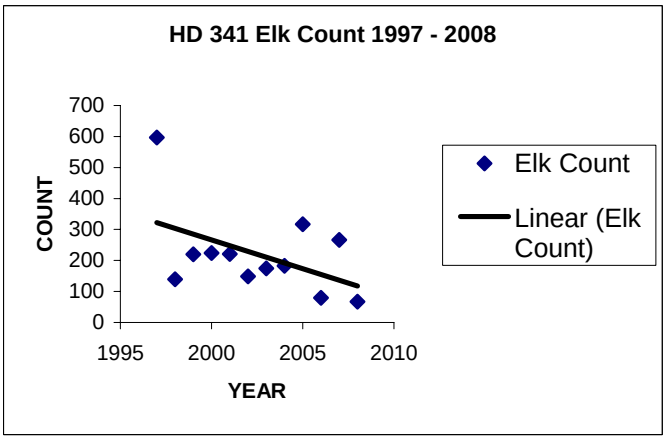
The Mount Haggin Wildlife Management Area was established in 1976 in part to provide year-round habitat for wildlife, emphasizing elk, moose, and mule deer. Other species that are known to use the management area permanently, seasonally, or occasionally are black bear, wolf, mountain lion, grizzly bear, bobcat, pine marten, wolverine, various bird species, a variety of amphibians, and a variety of small mammals.

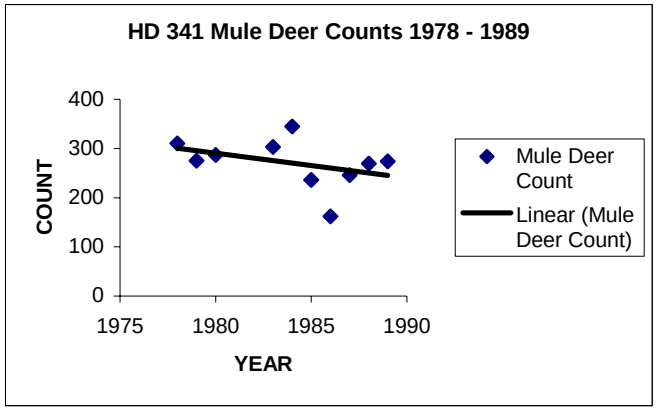
Aerial surveys of the winter range in Hunting District 341 have been flown annually since 1978 in order to determine trend in elk and mule deer populations on the WMA. From 1978 through 1997, elk populations in HD 341 increased, then began to decline from 1998 through 2008. The mule deer population in HD 341 decreased slightly from 1978 through 1989 but has been declining at a greater rate since 1990.

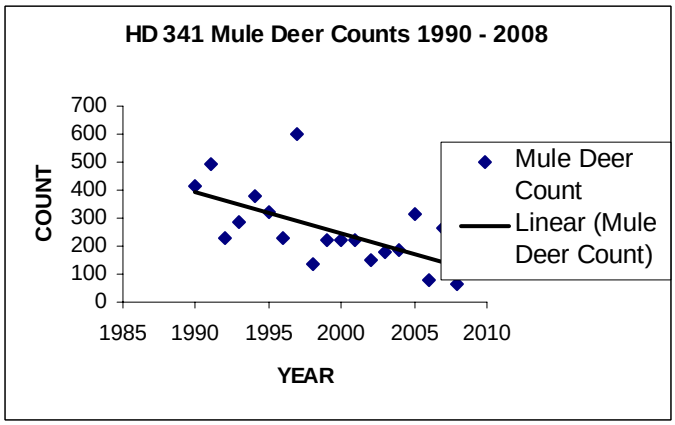
Frisina et al. (2006) contrasted winter diets of mule deer and elk and related them to population trends of both species on the Mount Haggin WMA. Research found that the same five browse species comprised 95% and 52% of the mule deer and elk winter diets, respectively. These plant species were antelope bitterbrush, Oregon grape, Rocky Mountain juniper, Douglas fir, and lodgepole pine. The diet similarity between elk and mule deer indicates the potential for competition between these species. Because elk have a more varied diet (55% browse, 33% grass, 12% forbs) than mule deer (97% browse, 2% grass, 1% forbs) on this winter range, it is

likely mule deer would be more negatively impacted. The decline in mule deer trend between 1990 and 1996 with a concomitant upward trend of elk through 1996 indicates competition may have been occurring. Douglas fir and lodgepole pine are both considered a low value browse for elk and mule deer (Kufeld 1973). During this study, these species contributed 8% and 3%, respectively, to the diet. The relatively high contribution of low value browse to the winter diets is a further indication that the combined populations of mule deer and elk may be exceeding habitat carrying capacity, possibly due to the loss of valuable browse species such as bitterbrush and aspen.

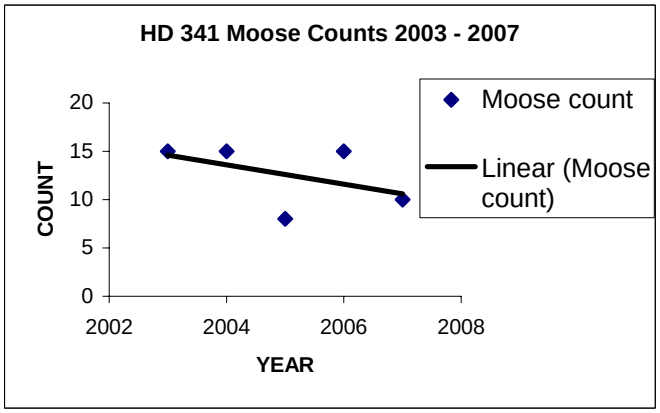








Moose occur year-round on Mount Haggin WMA including that portion that lies within Hunting District 341. During annual winter aerial surveys of HD 341, 8 to 15 moose have been observed during the period 2003-2007. Because they consume mostly browse, moose in this area of Mount Haggin WMA are heavily associated with wet areas predominated by aspen and willow with nearby conifer stands for security.



3.2.6 Aesthetics

From the Deerlodge Valley and Fairmont Hot Springs Resort, Mount Haggin WMA's mountainous landscape is a carpet of green pine and fir trees with an increasing number of visible pockets of rust-colored, beetle-killed lodgepole pine. Its foothills are primarily covered with grasslands with fingers of conifers, sagebrush, and other shrubs such as bitterbrush, rabbitbrush, and potentilla covering the lower elevations.

The proposed aspen and bitterbrush treatment areas are all visible from either the Beal Mine Haul Road or the Willow Creek Road with the exception of the German Gulch bitterbrush site which is visible from the German Gulch foot trail.

In areas of forest affected by the infestation of the mountain pine beetle, pine needles appear in shades of red and brown denoting a dying or dead tree. Such areas are visible from various vantage points in and around the WMA.

3.2.7 Cultural & Historic

As previously noted, portions of Mount Haggin WMA have been affected by the mining and logging industries in the late19th and 20th centuries. Some remnants of these activities, such as flumes, logging roads, and placer mining, remain scattered along the German Gulch drainage and other sites within the WMA. In addition to those relatively recent activities, the presence of ancient peoples using the area also remains in the form of lithic scatter.

There are no known culturally or historically noteworthy sites within the targeted areas proposed for habitat restoration.

3.2.8 Recreation

The WMA provides the public with year-round recreation opportunities such as hunting, fishing, hiking, cross-country skiing, snowmobiling, and wildlife viewing.

Mount Haggin WMA encompasses parts of Hunting Districts 319 and 341. All of the locations for the proposed habitat restoration are located within Hunting District 341.

In winter, snowmobiling, cross-country skiing, and other forms of winter recreation is permitted within the Mount Haggin WMA on the east side of the Continental Divide only. Otherwise, the rest of the WMA is closed during the winter in order to provide security for wintering big game species.

3.2.9 Health Risks/Hazards

Since one of the methods FWP currently uses to manage noxious weed infestations is chemical means, there is the potential for spillage to occur. However, only trained and licensed staff or contractors may apply the herbicides to specified areas within the WMA to decrease the chance of negative consequences to native vegetation.

Due to the traffic associated with the Beal Mine clean up, traffic does occur on the haul road within the proposed project area. Visitors to the WMA need to be mindful of vehicles and equipment along this road.

3.2.10 Community Resources

Adjacent to the northeastern portion of the WMA are a handful of private residences, agricultural lands, and Fairmont Hot Springs Resort.

The Beal Mine Haul Road is maintained to provide year-round access to the Beal Mine which lies south of the WMA. Willow Creek Road is also maintained to provide access to public lands on the WMA.

4.0: ENVIRONMENTAL CONSEQUENCES

4.1 Description of Relevant Affected Resources

4.1.1 Soil & Geologic

Predicted Consequences of Alternative A

Logging efforts are often completed in winter when the ground is frozen in order to minimize ground disturbance, compaction, erosion, and siltation. Since that portion of Mount Haggin WMA where the project is proposed to occur is closed in winter to provide security to big game on the winter range, timber removal will occur during the late spring and summer seasons. The ground will subsequently be susceptible to the establishment of new erosion patterns and compactions.

A short-term effect caused by the use of mechanical equipment to cut and transport trees to landings may lead to some soil instability. Ground disturbance will be mitigated by utilizing existing roads whenever possible; constructing new roads on moderate to low slopes; avoiding skidding straight up and down slopes; utilizing cut-to-length logging systems; using rubber-tired skidders; and avoiding areas with thin and sensitive soils. There will be no short- or long-term effects on the overall geologic substrate.

There is potential for short- and long-term effects on soil compaction and erosion. Landings and areas of slash accumulation are subject to soil compaction. To mitigate these effects, landings will be located where hardened sites currently exist such as parking areas, old roadways, or other sites compacted adjacent to Beal Mine Haul Road. Existing roads will be used whenever possible to transport material. Designated skid trails would be mechanically raked and recontoured to diminish the effects of the restoration activities, if necessary.

Any disturbed areas will be reseeded with native grasses and forbs to reduce new erosion patterns from becoming established and moving sediment into nearby creeks. The reseeding of disturbed areas will decrease establishment of noxious weeds into previously unaffected areas. Any invading noxious weeds will be managed through FWP's Integrated Noxious Weed Management Plan. All seed mixes will reflect those native species that currently exist on-site.

The installation of a temporary culvert to protect Gregson Creek will require a limited amount of groundbreaking activity in order to place it in line with the old logging road that will be used to provide access to the area targeted for the removal of beetle-killed lodgepole pine. FWP will obtain the necessary permits for this stream work and will meet the requirements of the Streamside Management Zone Law (MCA 77-5-301) that protects stream channels and banks and prohibits streamside activities that would diminish riparian habitat values.

No unique geologic or physical features have been identified in the project areas. Areas identified for treatment are similar to surrounding terrain found outside the unit boundaries.

Predicted Consequences of Alternative B
If the No Action alternative were chosen, no disturbance to the current soil conditions would occur, and old logging roads would not be reopened.

4.1.2 Air & Noise

Predicted Consequences of Alternative A
Machinery used during the timber removal project will create noise and emissions. The potential exists for creation of dust from cutting operations. This project will be completed during the late spring and summer when visitation to Mount Haggin WMA is moderate and scattered. The intrusion of noise from logging equipment will be taken into consideration, and active habitat restoration work will be limited to daylight hours to minimize disturbance to potential campers and wildlife in the area. Contracted workers will be exposed to intermittent noise levels that will require the use of hearing protection. In addition to noise being generated by tree-removal activities, the movement of logging equipment and trucks in and out of the WMA will create additional traffic noise on Beal Mine Haul Road. All generated noise and emissions are temporary and will cease at the completion of the restoration activities in the fall.

Burning of slash will result in creation of smoke and temporary deleterious effects on air quality which may affect the health of individuals and will be visible from Fairmont Hot Springs Resort and nearby vicinities. Any burning will occur during periods when conditions are suitable for good air dispersion. All applicable air shed or burning permits will be acquired before any burning takes place.

A secondary effect of conducting a forest removal project within the WMA's forest is the opening up of the canopy which could lead to increases in ambient air temperature and increased wind movement. The affect of removing encroaching conifers on temperature and air movement in those areas is considered minor due to the limited amount of acres involved in aspen and bitterbrush habitat restoration. The removal of trees in those treatment areas is expected to increase overall ambient air temperatures and wind movement within that local area since the quantity of lodgepole pine to be removed for the forest health portion of the restoration project is greater. These changes are expected to have minimal negative impacts on the local wildlife populations in the area and will have positive impacts on the grass and forb community that will result once the forest canopy is removed.

Predicted Consequences of Alternative B
Ambient air quality and noise level would remain at the current levels if the No Action alternative were chosen.

4.1.3 Water & Fisheries

Predicted Consequences of Alternative A
With any removal of vegetation and soil-disturbing activities in close proximity to water resources, there is the threat of erosion and sediment into those resources. There may be a short-term increase in surface runoff across roads and trails that are used for skidding or transporting mechanical equipment with the proposed project.

The bitterbrush communities selected to receive treatment in this proposed project are on dry sites and not in close proximity to active creeks. The Clayton aspen treatment area is up-slope and adjacent to Whitepine Creek. Temporary access to that location will be established from Beal Mine Haul Road in such a way as to not impede the creek's flow or to increase sediment into the creek. Conifers to be eliminated from inside and around this site in close proximity to Whitepine Creek will be removed by hand which will decrease the possibility of the establishment of erosion patterns that could affect the creek.

Designated skid trails will be located on the contours and along natural breaks and will not go straight up and down the slope thus minimizing the chance of overland flow of surface water. If erosion does occur on steeper slopes due to heavy rains, steps will be taken to reduce or mitigate that erosion through the use of straw bales, netting, or other erosion barriers to limit runoff. All disturbed areas will be reseeded with appropriate native grass/forb seed mixtures to reduce chances for erosion.

Additional mitigations FWP will use to limit potential impacts to the waterways in the targeted areas will include: 1) installation of temporary plastic culverts to be removed at the end of the project; 2) the addition of gravel or logs in depressed wet areas in the roadways, 3) constructing new, temporary roads on moderate to low slopes and in strict accordance with Water Quality Best Management Practices for Montana Forests (Logan 2001); and 4) bringing existing logging roads built prior to the 1991 Streamside Management Act into compliance.

After the removal of the conifers within and around the aspen communities is completed, there is the potential for water yields in those areas to increase since aspen will no longer be competing with conifers for moisture. This increase in moisture will likely benefit other vegetation as well as streamside habitat and associated species.

Predicted Consequences of Alternative B
The implementation of the No Action alternative would not change the supervision and management of the aquatic resources within the WMA. Fisheries biologist would continue to monitor creek health for the benefit of fish and amphibian species.

4.1.4 Vegetation

Predicted Consequences of Alternative A
The cumulative effect of this project on the changes in diversity, productivity, and abundance of select plant communities is considered positive. It can be expected that individual plant health and vigor will improve after the removal of the encroaching conifers for bitterbrush and aspen stands that receive the proposed treatments. FWP expects there will be an increase in forage and cover available for ungulates and other wildlife such as small mammals and birds with the improved condition of these stands.

In the forest health treatment areas, the effects of this project are expected to improve the health and vigor of the remaining lodgepole and Douglas fir trees by reducing tree density and therefore the competition for soil moisture and nutrients and the rapid spread of pest infestations or other diseases; provide better structural diversity to the forest by increasing the potential for regeneration and multi-age stands; reducing the risk of catastrophic fire by reducing forest fuels; and minimizing the potential for large-scale jackpot piles of fallen dead lodgepole that will negatively impact wildlife movement and use in this area.

The forests on Mount Haggin WMA as a whole will not change a great deal from the proposed project since it only affects approximately 900 acres within the WMA's 58,000 acres. The diversity of tree species will not be negatively impacted because Douglas fir and lodgepole pine will still be plentiful throughout the WMA.

There is a possibility for the introduction of noxious weeds in disturbed soils as this project gets implemented. To prevent this, disturbed soils will be reseeded with appropriate native grasses and forbs upon completion of the project. All treatment areas will be actively managed for noxious weeds for five years post-project under the guidance of FWP's Integrated Noxious Weed Management Plan. The reduction of knapweed near rehabilitated bitterbrush communities will be a positive adjustment in the landscape because the plant out-competes native grasses and forbs for soil resources often in areas where knapweed is established. The elimination of knapweed near bitterbrush will assist in the restoration efforts not only of bitterbrush but other native vegetation as well.

Predicted Consequences of Alternative B
If the No Action alternative were selected, the health of some of Mount Haggin WMA's aspen and bitterbrush communities would continue to decline due to increasing conifer encroachment. The targeted aspen communities would likely move more to the third type of aspen communal health as described by Bartos, "decadent and falling apart," which would negatively affect wildlife reliant upon them for food and shelter.

As with aspen, the inability for bitterbrush to thrive and regenerate will reduce the forage and cover it can provide to ungulates and other wildlife species. Although there is no scientific evidence that knapweed has contributed to the decline of bitterbrush within the WMA, it is a competitor for resources yet does not provide an adequate forage replacement for bitterbrush for browsing wildlife.

It is reasonable to believe that all the lodgepole pine pole-size or larger on the winter range portion of the Mount Haggin WMA will be dead from mountain pine beetle infestation within a few years. This would greatly increase the fuel load in this area thereby significantly increasing the risk of catastrophic wildfire. Big game use and movement patterns in this area may be greatly impacted when millions of dead lodgepole pine trees begin falling over and creating jackpots of impassable debris.

4.1.5 Wildlife

Predicted Consequences of Alternative A
The proposed habitat restoration at the bitterbrush and aspen treatment sites are not anticipated to cause wildlife species any lasting negative affects because the work will be completed in a very limited area, the project is brief in duration, will occur during the summer when wildlife is less stressed, and wildlife can easily disperse from the treatment areas until the work is completed. FWP expects that the normal movements of wildlife into and through the restored areas will return to pre-project levels and patterns after the completion of the project.

As the treated aspen and bitterbrush communities gain vigor and increase in size over time, there is the potential that more wildlife will use those areas for forage and shelter. Although the combined acreage of the Gregson North, South, and Excaliner forest health treatment areas is relatively large (approximately 625 acres), its expected impact on overall elk security and cover across the winter range will be minimized by the fact that it is located in the heart of an essentially roadless area (except for old logging roads which are closed off to motorized traffic) and is heavily interspersed with Douglas fir and occasional stands of aspen, alder and willow, all of which will remain. Other effects on wildlife in the forest health treatment areas are expected. For example, the change in tree density may alter the diversity or abundance of bird species in those immediate areas. Cavity-nesting birds such as mountain chickadees and downy woodpeckers may decrease in local numbers while birds that benefit from forest openings, such as olive-sided flycatchers, may increase. Effect on the overall bird diversity or abundance in the area will be insignificant since the bulk of Mount Haggin WMA's forests will remain intact. Douglas fir and other deciduous tree species that will be retained will continue to provide bat species with shelter and forage areas. The removal of a portion of the forest canopy will benefit wildlife by increasing the forage within the under-story plant community. Areas that provide significant thermal and bedding security or travel corridors for game animals would be left largely intact. No critical wildlife habitat will be affected.

Human activity associated with logging and rehabilitation would cause short-term increases in wildlife stress at the project sites. Large acreages of similar habitat exist in the surrounding area that wildlife can disperse to. This temporary displacement of animals during operations is not expected to have a significant impact.

Predicted Consequences of Alternative B
Under this alternative, FWP would continue to manage the WMA for the benefit of wildlife species while providing opportunities for outdoor recreation for the public. Ungulate populations would continue to be monitored and hunting opportunities would be adjusted as

needed. The carrying capacity of the winter range is expected to continue to decrease over time due to forest succession and conifer encroachment.

The continued decline of important winter forage for ungulates (i.e. aspen and bitterbrush) within the WMA may influence elk, deer, and moose to move elsewhere, potentially onto nearby private lands, when forage at the WMA is exhausted. This transition may be of some concern to ranchers using their lands adjacent to the WMA for cattle grazing.

4.1.6 Aesthetics

Predicted Consequences of Alternative A
There will be temporary effects to visual quality during the course of logging operations. Conifer removal at the various sites will alter the current look to varying degrees for a particular area based on the specified type of treatment. Where the removal of beetle-killed lodgepole is specified, more open environments with greater tree crown spacing will replace the densely packed forest. Some changes in the view of the mountains will be visible from the valley floor because of the locations of the proposed treatment areas.

In the target areas where encroaching conifers are removed in and near aspen and bitterbrush communities, a more open landscape will be visible from nearby roads. The overall affect on the entire landscape is expected to be negligible.

Disturbance to grass and forb vegetation from these proposed restoration efforts would take one to three years to recover. Seeding will occur with native grasses/forbs to lessen these impacts in disturbed areas. Stumps will be cut to a maximum of 4 inches in height to lessen visual impacts and impediments to wildlife movement. Slash will be dealt with in various ways depending on the treatment area.

Predicted Consequences of Alternative B
If the No Action alternative were chosen, there would be a continued change in the appearance of the aspen and bitterbrush communities that had been chosen for the habitat restoration activities as more conifers became established in these areas. In the conifer forest, the affects of the mountain pine beetle infestation would continue to be increasingly visible through the denotation of killed trees by their red coloration on the landscape.

4.1.7 Recreation

Predicted Consequences of Alternative A
This alternative would be implemented during the summer and early fall seasons when the WMA is visited by hikers, campers, wildlife watchers, and hunters. The proposed aspen and bitterbrush habitat restoration work will require access to those areas be closed when active conifer removal is taking place. Visitors accessing the WMA and other private and public lands from the Beal Mine Haul Road and Willow Creek Road may be inconvenienced when logging trucks and other equipment used for the project are traveling on the roads. Due to the short duration of activity, any negative impacts would be temporary and limited to a few months at best.

Some campers and hikers are likely to choose to use different areas with the WMA where extraction equipment noise cannot be heard and the natural sounds of the forest can be enjoyed.

Since it is expected that the proposed project will be completed by early fall, normal hunting activities within the WMA are likely to occur without interruption. The access road used for the removal of beetle-killed lodgepole pine will be blocked to motorized vehicles after the project is completed, but walk-in and horseback access will be permitted for hunting and other recreational activities. Logged units will provide both hunters and wildlife easier movement within those areas since the density of trees will be decreased.

After the completion of the proposed project, access to all treatment areas will return to their pre-project levels. The public will have the ability to explore and use those areas under Mount Haggin WMA's current management policies.

Predicted Consequences of Alternative B
The current Mount Haggin WMA's access and management policies will continue to be in effect. The public's access to the WMA for the pursuit of hiking, camping, hunting, and other recreational activities will continue as usual.

4.1.8 Cultural & Historic

Predicted Consequences of Alternative A
No effects on historical or cultural resources are anticipated. The State Historic Preservation Office (SHPO) has reviewed a description of the proposed project and a map identifying the locations of the habitat restoration sites. A file search by the Cultural Records Manager found that several previously identified sites had been recorded, especially in the vicinity of German Gulch. SHPO felt that the likelihood of cultural properties impacted by the habitat restoration was low based upon the work to be completed. SHPO will be contacted to ensure those sites are investigated properly if during the establishment of temporary new roads cultural or historic artifacts are discovered.

Predicted Consequences of Alternative B
FWP will continue to be proper stewards of the State's cultural and historic resources on state-owned lands per the requirements of state law 22-4-424 and 22-4-435.

4.1.9 Hazards / Risks

Predicted Consequences of Alternative A
This project would create temporary hazards associated with tree falling and equipment operation for material removal and rehabilitation. Visitor access to the project area will be restricted with signing and barricades during the operational phase of this project. Signs will be posted along Beal Mine Haul Road informing drivers to be watchful for logging trucks and equipment. Professional personnel knowledgeable in safety practices and procedures to protect themselves will be employed to carry out this project.

People with respiratory illness could experience a temporary health hazard resulting from smoke from slash pile treatments. When burning is necessary, it will occur when weather conditions are most favorable. All applicable air shed and burn permits would be obtained.

Herbicide application would create minor, temporary hazards during the treatment for noxious weeds. Herbicide application will be conducted by state-certified applicators and would follow all pertinent laws and restrictions.

The vehicles utilized during the timber operations use various petroleum distillates. Care will be taken to prevent spills. Soils saturated with oils will be removed if any significant spills occur.

There will be a positive impact through the lowering of risk of catastrophic stand-replacement wildfire due to reduction of fuels in the project area.

Predicted Consequences of Alternative B
With the implementation of a No Action alternative, FWP would continue to manage noxious weeds within the WMA per the guidance of FWP's Integrated Noxious Weed Management Plan. The application of herbicides would be conducted by state-certified applicators and would follow all pertinent laws and restrictions.

The persistence of the mountain pine beetle infestation within the WMA's forests will continue to kill lodgepole pine which will add to the existing fuel load within the forest and increase the risk of large-scale piles of fallen dead trees that could greatly impact wildlife movement and use in this area. Standing dead trees have the potential to pose a public safety hazard to hikers, hunters, and other recreationists in this area in the event they fall or get blown over.

Although no major forest fire has occurred within the WMA since the 1920s, the potential exist for a large-scale stand replacement fire due to the weakened health of existing conifers and the high fuel levels.

4.1.10 Community Resources

Predicted Consequences of Alternative A
A temporary increase in industrial/commercial traffic would be associated with this project. Logging trucks and equipment would be active in the area. The project will occur during the summer, so some visitors will likely be inconvenienced by additional traffic from logging vehicles on Beal Mine Haul Road and Fairmont Road to access Interstate 90. Appropriate traffic and hazard signing will be used to minimize conflict during the implementation of the project.

Local residences and the Fairmont Hot Springs Resort are not expected to be impacted by the habitat restoration projects since work will be localized and the project period duration is short.

Predicted Consequences of Alternative B
There would be no change in the community resources bordering the WMA if the No Action alternative was executed. The traffic patterns would remain at their normal levels and local businesses would continue to exist.

5.0 MONITORING & LONG-TERM MANAGEMENT

FWP's wildlife biologist will work with the contracted forester to implement the plan and oversee necessary treatments to mitigate the affects of the conifer extraction in the treatment areas as part of the habitat restoration plan.

FWP has established permanent vegetation monitoring stations and photo plots in four of the five treatment areas to monitor the effects of the proposed treatments in the bitterbrush. Pre-treatment measurements and photos were taken during summer 2008. Photos will be retaken annually while measurements will be retaken every five years thereafter. FWP will establish permanent photo plots in the stands to be treated in order to monitor the effects of conifer removal from select aspen stands. Pre-treatment photos will be taken prior to the start of logging in June 2009. Photos will be retaken every year thereafter. FWP will monitor winter use of the logged areas by elk, mule deer, and moose during annual winter aerial surveys of the winter range to monitor the effects of the lodgepole pine removal from the conifer forest in order to improve forest health. In addition, use of the logged areas by big game, small mammals, and birds will be monitored from the ground by using the logging roads as a transect of use. The transect will be monitored at least once during the winter and once during the summer for at least 5 years post treatment. Scat piles and tracks intersecting the transect will be identified and counted. Birds detected along the transect will also be identified and counted.

New growth on aspen (suckers) is very palatable to elk, deer, and moose, and those aspen communities targeted in this project are likely to come under browsing pressure from those species. However, we expect browse pressure to be dispersed across all aspen stands in this area. The overall result should be an increase in overall health and stem recruitment of the aspen communities.

Periodic habitat maintenance is not expected to be required in any time interval less than 20-30 years if the proposed project occurs as planned and the aspen and bitterbrush communities respond as anticipated.

6.0 POTENTIAL LONG-TERM CONSEQUENCES

It is logical that winter range conditions would improve in ways beneficial to big game over time. Elk, mule deer and moose populations could increase as a result. Although there are other factors affecting big game populations such as weather conditions and hunter harvest success, in simple terms results of this project could increase carrying capacity of the winter range. There would be a corresponding increase in wildlife watching opportunities and could be a corresponding increase in hunting opportunity that follows if a noticeable increase in big game resulted from these habitat restoration efforts.

There is the potential to see several long-term consequences with the removal of select dense, even-aged stands of beetle-killed lodgepole. First, the structural diversity of the forest will increase over time by removing even-aged stands and creating more of a mosaic of forest patches. This will benefit small mammals such as snowshoe hare, pine marten, and a variety of bird species. Reducing the density of trees will help to slow the spread of mountain pine beetle.

Removing stands of dead and dying trees will help to reduce the fuel load in the forest thereby minimizing the threat of catastrophic wildfire in this area and will also help to minimize the potential for large jackpot piles of downed timber that would impact wildlife movements and use in this area.

7.0 PUBLIC PARTICIPATION AND COLLABORATORS

7.1 Public Participation

Presentations on the proposed habitat restoration project are being offered to area community-based groups including County Commissions for Deer Lodge and Silver Bow Counties, Anaconda Sportmen's Association, Skyline Sportsmen's Association, and the Mile High Backcountry Horsemen's Association.

The Commissioners of Butte-Silver Bow and Anaconda-Deer Lodge Counties have been contacted about the proposed project and are supportive of FWP's efforts.

The public will be notified in the following manners to comment on this current EA, the proposed action, and alternatives:

- Two public notices in each of these papers: *The Montana Standard* (Butte) and *Anaconda Ledger*
- One statewide press release
- Direct mailing to adjacent landowners and interested parties, and
- Public notice on the Fish, Wildlife & Parks web page: *http://fwp.mt.gov*.

Copies will be available for pubic review at FWP Region 3 Headquarters and at the FWP Butte Area Resource Office.

This level of public notice and participation is appropriate for a project of this scope.

The public comment period will extend for (31) thirty-one days. Written comments will be accepted until 5:00 p.m., February 27, 2009 and can be mailed to the address below:

Mt. Haggin WMA Habitat Restoration Project
Montana Fish, Wildlife & Parks
Butte Area Resource Office
1820 Meadowlark Lane
Butte, MT 59701 or email comments to: vboccadori@mt.gov

7.2 Collaborators - Other Agencies/Offices that Contributed to the EA

Montana Department of Fish, Wildlife & Parks
- Fisheries Division
- Legal Bureau
- Parks Division
- Wildlife Division

Montana Department of Natural Resources and Conservation
Montana State Historic Preservation Office

USDA, Natural Resources Conservation Services – Soil Survey

8.0 ANTICIPATED TIMELINE

Public Comment Period of EA: Late-January through Late-February
Decision Notice: Late February
FWP Commission Approval: Mid-March
Request for Proposal (RFP) for Licensed Forester Published:
Mid-March
Initiation of Project: Mid-May (depending upon road conditions)
Completion of Project: Late September 2009

9.0 DETERMINATION IF A ENVIRONMENTAL IMPACT STATEMENT IS REQUIRED

Based upon the above assessment which has identified a limited number of minor impacts to the physical and human environment that will be either for a short duration or that the affects of the propose project can be mitigated below the level of significance, an EIS in not required and an environmental assessment is the appropriate level of review.

The permanent removal of a limited number of lodgepole pine and Douglas fir will not diminish the variety of conifers that can be found with the Mount Haggin Wildlife Management Area nor be detrimental to the wildlife existing there. As described in the previous sections of this EA, the proposed project will be affecting approximately 950 acres of the 58,000 acres the WMA encompasses. All disturbed terrestrial areas will be groomed and reseeded with local native vegetation so actions needed to remove conifers will not leave a lasting imprint on the landscape of the WMA. The brief duration and targeted approach of the habitat restoration plan will limit the impacts to wildlife. In the end, wildlife will benefit from the improved selection of forage.

10.0 EA PREPARERS

Vanna Boccadori, FWP Wildlife Biologist Butte, MT
Rebecca Cooper, FWP MEPA Coordinator Helena, MT

REFERENCES

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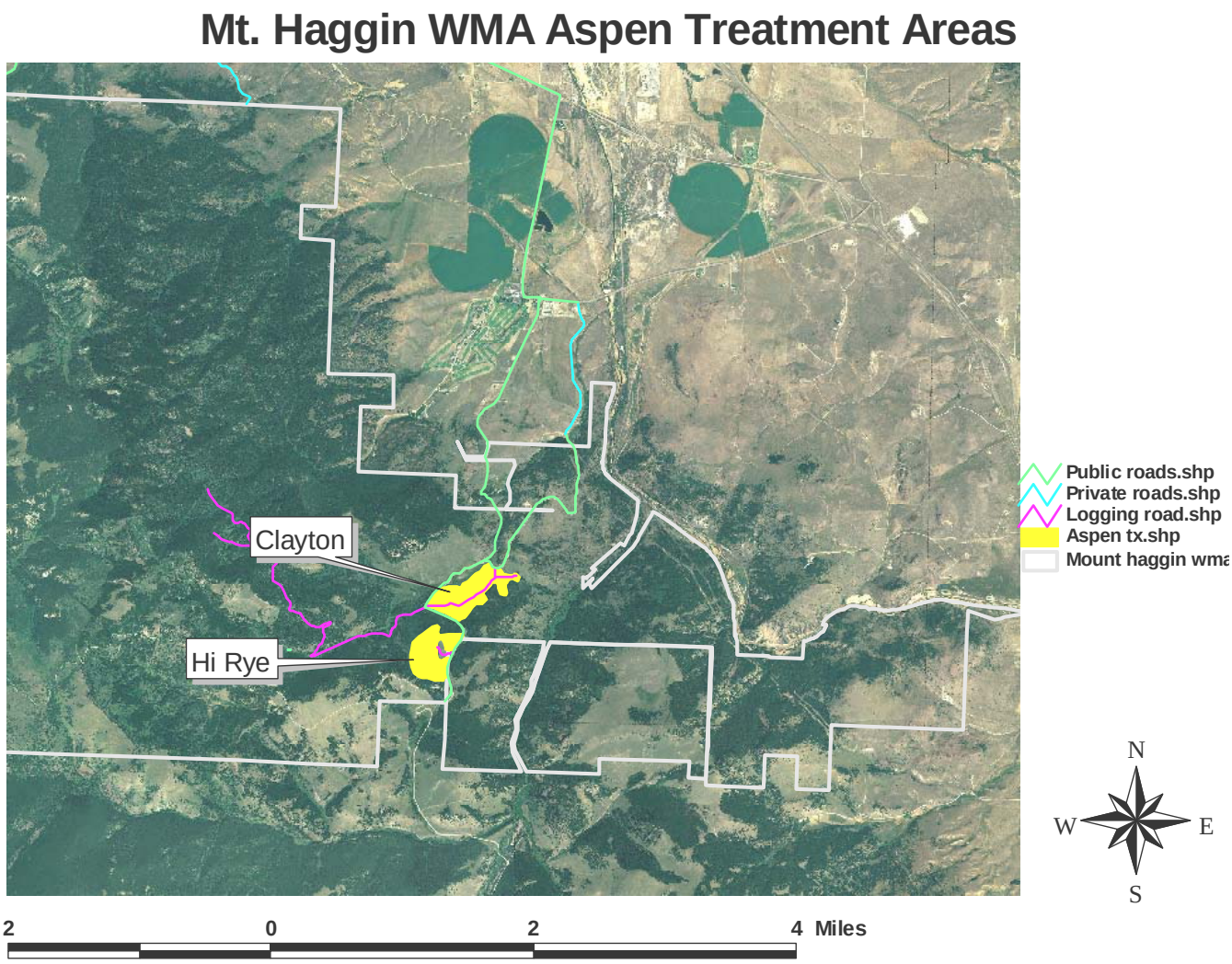
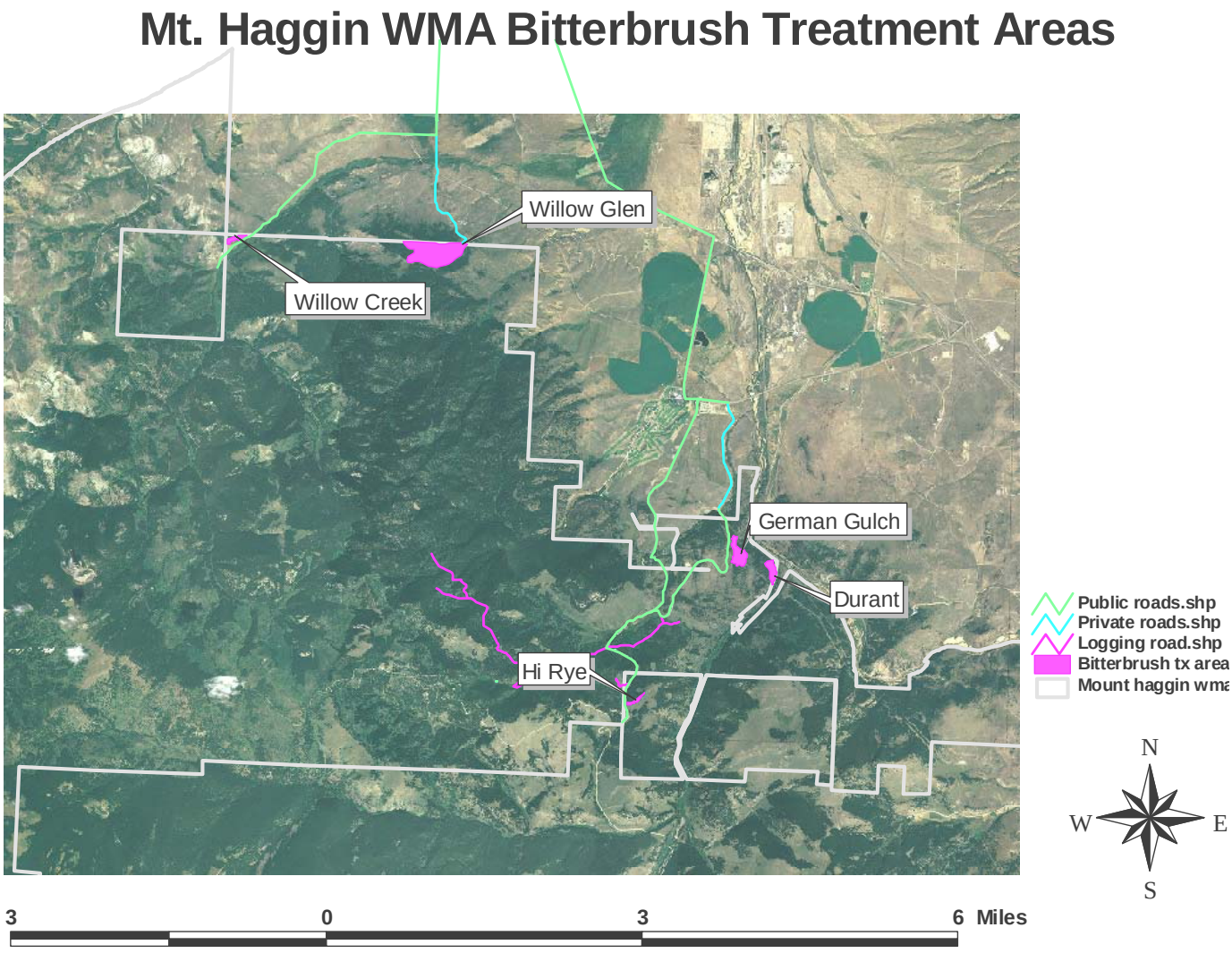
APPENDIX A, 1 of 3: Aspen Treatment Areas



APPENDIX A, 2 of 3: Bitterbrush Treatment Areas



APPENDIX A, 3 of 3: Forest Health Treatment Areas

Mt. Haggin WMA Forest Health Treatment Areas